



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Title: Tri Valve for Backflow Preventer Assembly
Examiner: Stephen M. Hepperle
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LISTING OF CLAIMS

1. Canceled.

2. (New) A tri valve backflow prevention apparatus for use with a temporary conventional backflow prevention assembly between existing water main pipe and water main pipe under construction, and which permits activation of the water main pipe under construction and removal of the conventional temporary backflow prevention assembly without water in the water main pipe under construction being drained after its required pressure and bacterial testing is successfully completed, and also without the wasteful practice of additional water being needed to flush and refill the emptied water main pipe under construction, and without exposure of the emptied water main pipe under construction to contamination on the construction site and the need for flushing the emptied water main pipe with good drinking water to remove such potential contamination, said tri valve backflow prevention apparatus comprising:

a tri valve housing with a main valve body and two side valves, said main valve body configured for connection between existing water main pipe and water main pipe under construction, and both of said side valves configured for connection to a temporary backflow prevention assembly; and

1 easily accessible means for opening and closing said main valve and each of said side
2 valves so that during water main construction said main valve body remains closed and said two
3 side valves are allowed to remain open to provide water needed at the construction site via said
4 temporary backflow prevention assembly, and when all construction and testing is completed,
5 said easily accessible opening and closing means are used to close said two side valves and
6 thereafter open said main valve for immediate activation of water main pipe for drinking water
7 delivery to the public and removal of the temporary backflow prevention assembly without
8 causing any water to be drained from the water main pipe under construction.

9 3. (New) The apparatus of claim 2 wherein said main valve body and said side valves
10 each have valve bodies made from ductile iron encapsulated with EPDM rubber.

11 4. (New) The apparatus of claim 2 wherein said easily accessible means for opening and
12 closing said main valve and each of said side valves comprises a top seated operating nut and
13 wherein each of said valve bodies further comprises a plurality of nuts and bolts, at least one O-
14 rings, at least one rubber gasket, a valve adjusting stem, and a valve wedge gate.

15 5. (New) The apparatus of claim 4 wherein said nuts and bolts are made from steel.

16 6. (New) The apparatus of claim 4 wherein said operating nuts are made from ductile
17 iron.

18 7. (New) The apparatus of claim 4 wherein said O-rings are made of nitrile rubber.

19 8. (New) The apparatus of claim 4 wherein said rubber gaskets are made of nitrile rubber.

20 9. (New) The apparatus of claim 4 wherein said valve adjusting stems are made of
21 manganese bronze.

22 10. (New) The apparatus of claim 4 wherein said valve wedge gates are made of ductile

1 iron encapsulated with EPDM rubber.

2 11. (New) The apparatus of claim 4 wherein said nuts and bolts are made from steel, said
3 operating nuts are made from ductile iron, said O-rings are made from nitrile rubber, said rubber
4 gaskets are made from nitrile rubber, said valve adjusting stems are made from manganese
5 bronze, and said valve wedge gates are made of ductile iron encapsulated with EPDM rubber.

6 12. (New) A method of protecting existing water main pipe and public drinking water
7 during water main construction that allows for connection of water main pipe under construction
8 to existing water main pipe and immediate delivery of good drinking water to the public after
9 construction is complete subsequent to the successful completion of applicable pressure and
10 bacterial testing of the water main pipe under construction without it being drained of water and
11 exposed to possible bacterial contamination during the removal of a temporary backflow
12 prevention assembly used with it during the construction process, said method comprising the
13 steps of:

14 providing a tri valve backflow prevention apparatus with a main valve body and two side
15 valves, said main valve body configured for connection between existing water main pipe and
16 water main pipe under construction, and both of said side valves configured for connection to a
17 temporary backflow prevention assembly, easily accessible means for opening and closing said
18 main valve and each of said side valves, a temporary backflow preventer assembly, existing
19 water main pipe, water main pipe under construction, and pressure and bacterial testing
20 equipment;

21 connecting said main valve of tri valve backflow prevention apparatus between said
22 existing water main pipe and said water main pipe under construction;

1 connecting said temporary backflow prevention assembly to said side valves of said
2 apparatus;

3 using said opening and closing means to open said side valves and close said main valve
4 body during water main construction;

5 after said water main construction is complete, using said pressure and bacterial testing
6 equipment to test said water main pipe under construction;

7 after said pressure and bacterial testing are successfully completed according to
8 applicable standards, using said opening and closing means to close said side valves;

9 using said opening and closing means to open said main valve body to activate said water
10 main pipe under construction for drinking water delivery to the public; and

11 removing said temporary backflow prevention assembly without causing any water to be
12 emptied from said water main pipe under construction, and also without the wasteful practice of
13 additional water being needed to flush and refill said water main pipe under construction after
14 being emptied, and without exposure of the emptied water main pipe under construction to
15 contamination on the construction site and the need for flushing said emptied water main pipe
16 with good drinking water to remove such potential contamination

17 13. (New) The method of claim 12 wherein the order of accomplishing said steps of
18 using said opening and closing means to open said main valve body to activate said water main
19 pipe under construction and removing said temporary backflow prevention assembly is
20 reversible.

21 14. (New) The method of claim 12 wherein said main valve body and said side valves
22 each have valve bodies made from ductile iron encapsulated with EPDM rubber.

1 15. (New) The method of claim 12 wherein said backflow prevented comprises a
2 plurality of nuts and bolts, an operating nut, a plurality of O-rings, a plurality of rubber gaskets, a
3 valve adjusting stem, and a plurality of valve wedge gates.

4 16. (New) The method of claim 15 wherein said nuts and bolts are made from steel.

5 17. (New) The method of claim 15 wherein said operating nuts are made from ductile
6 iron.

7 18. (New) The method of claim 15 wherein said O-rings and rubber gaskets are made of
8 nitrile rubber.

9 19. (New) The method of claim 15 wherein said valve adjusting stems are made of
10 manganese bronze.

11 20. (New) The method of claim 15 wherein said valve wedge gates are made of ductile
12 iron encapsulated with EPDM rubber.

13 21. (New) The method of claim 12 further comprising a step of providing plugging
14 means adapted to seal said side valves, and a step of using said plugging means to plug said side
15 valves after said step of removing said temporary backflow prevention assembly.

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